

2-Dimensional Policy Sensitivity Diagrams Convey Concise Insights



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Tornados and Rainbows are 2 common forms of sensitivity analyses in a typical DA

Tornado	Compares the effects of several variables	Shows base case and impact of swinging each variable across 10-90
Rainbow	Detailed analysis of one variable	Shows the EV and optimal decision policy

I will discuss a third type of sensitivity analysis that is useful when two variables interact. Let's consider two recent projects:

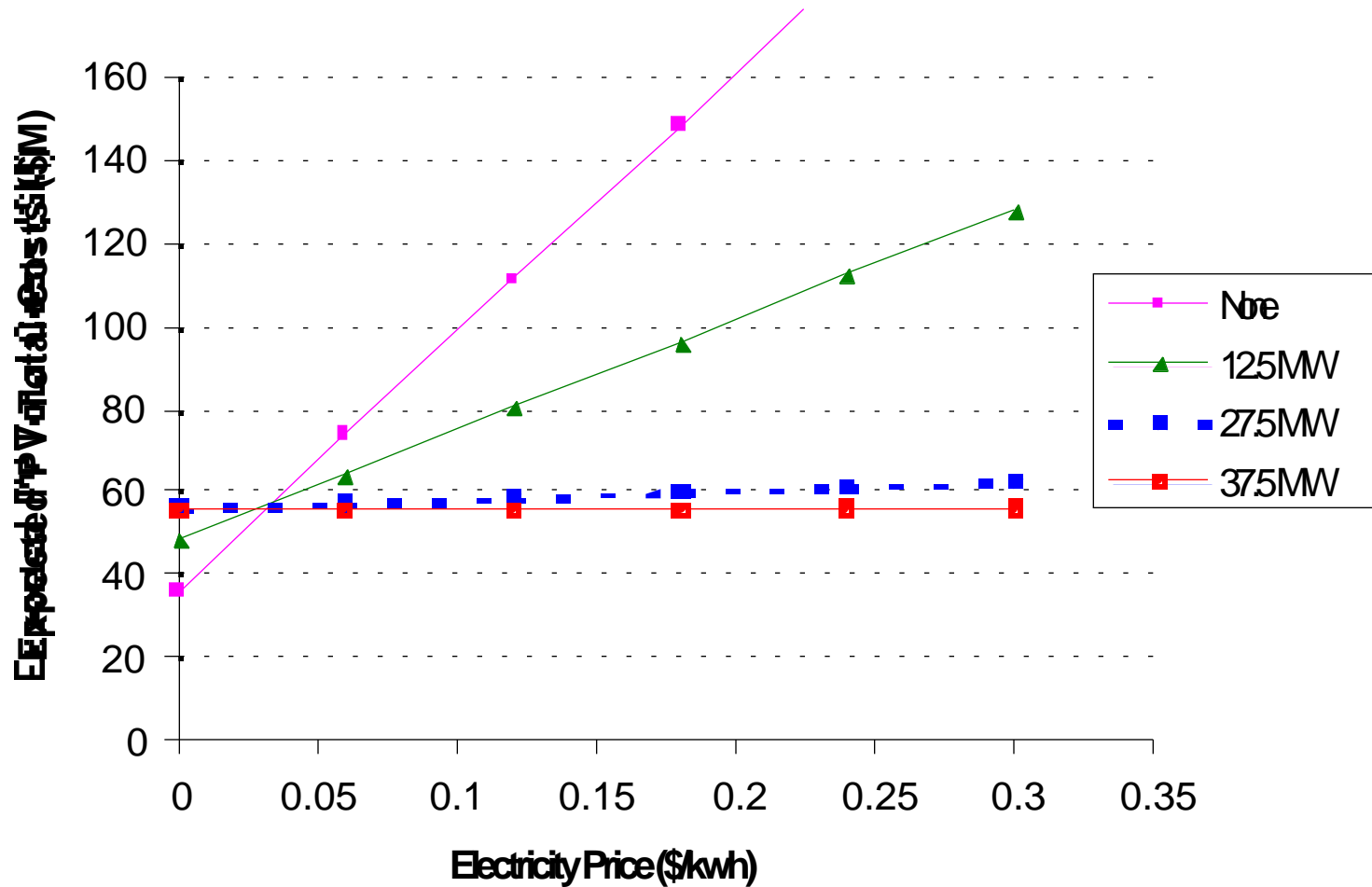
- Decision to invest in an on-site cogeneration power plant
- Decision to settle or go to trial

Our team developed and evaluated strategies to provide reliable, cost-effective power to our TO site

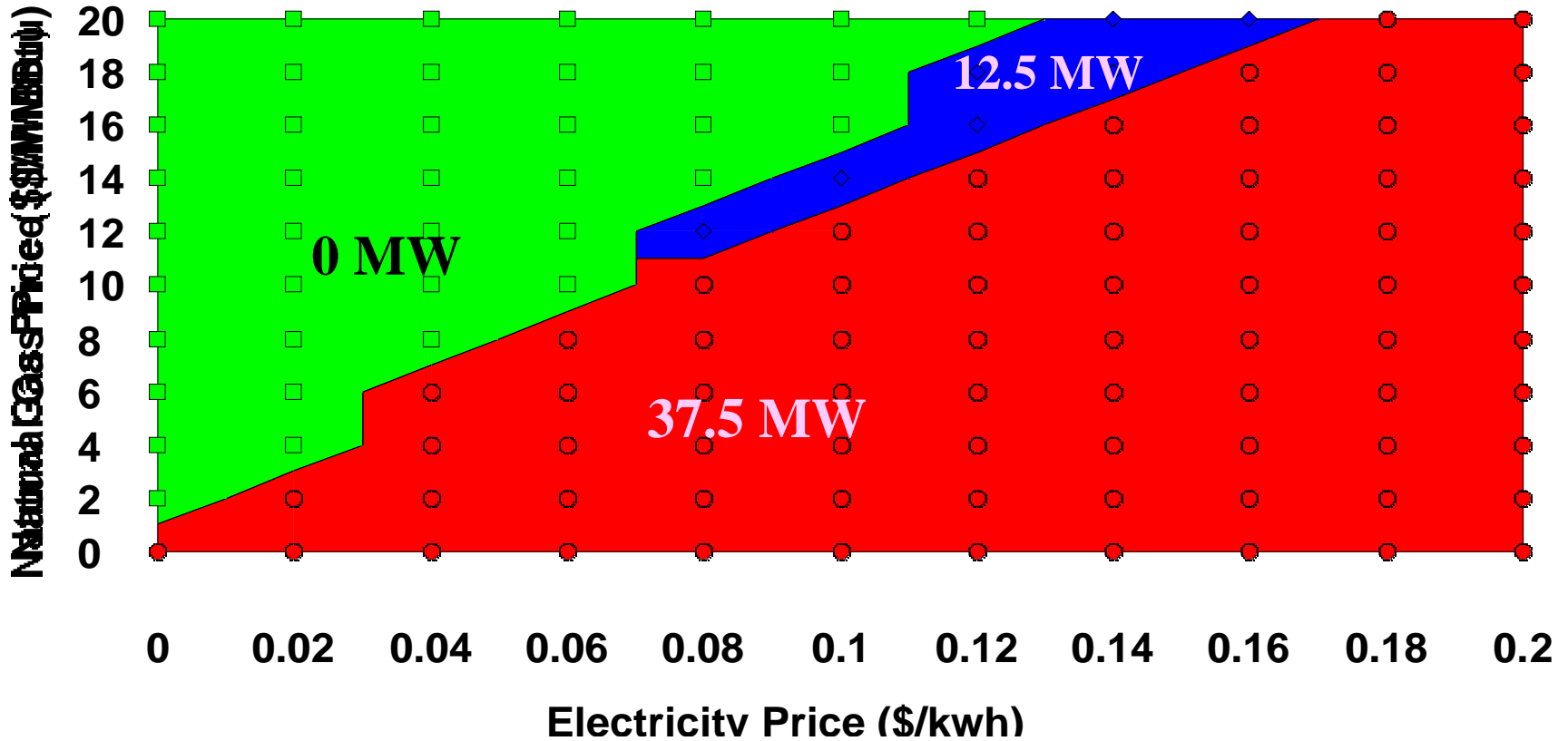
- Project was motivated by the recent power crisis in CA
- Since we have a large steam load, we explored the investment in a cogeneration plant that simultaneously satisfies our electric and steam load
- Strategies included:
 - ✓ Do Nothing
 - ✓ Build small facility
 - ✓ Build medium facility
 - ✓ Build large facility
- Criteria was PV of total costs:
 - ✓ Capital cost
 - ✓ O&M cost, including fuel
 - ✓ Outage cost
 - ✓ Purchased electricity cost



A rainbow sensitivity analysis shows expected costs and optimal policy as electric price is varied

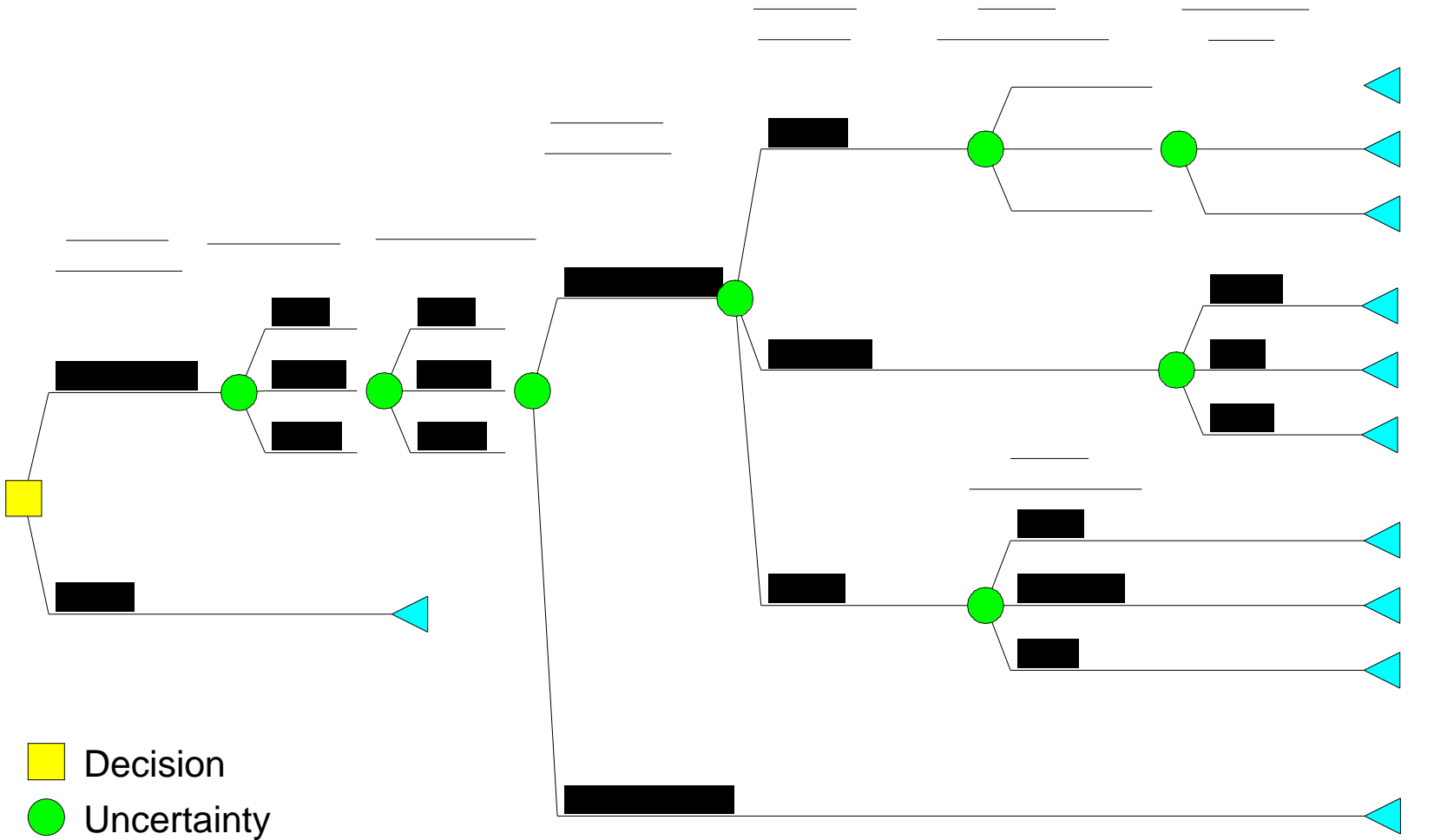


A two-way sensitivity analysis illustrates optimal policy changes when both electric and gas prices are varied

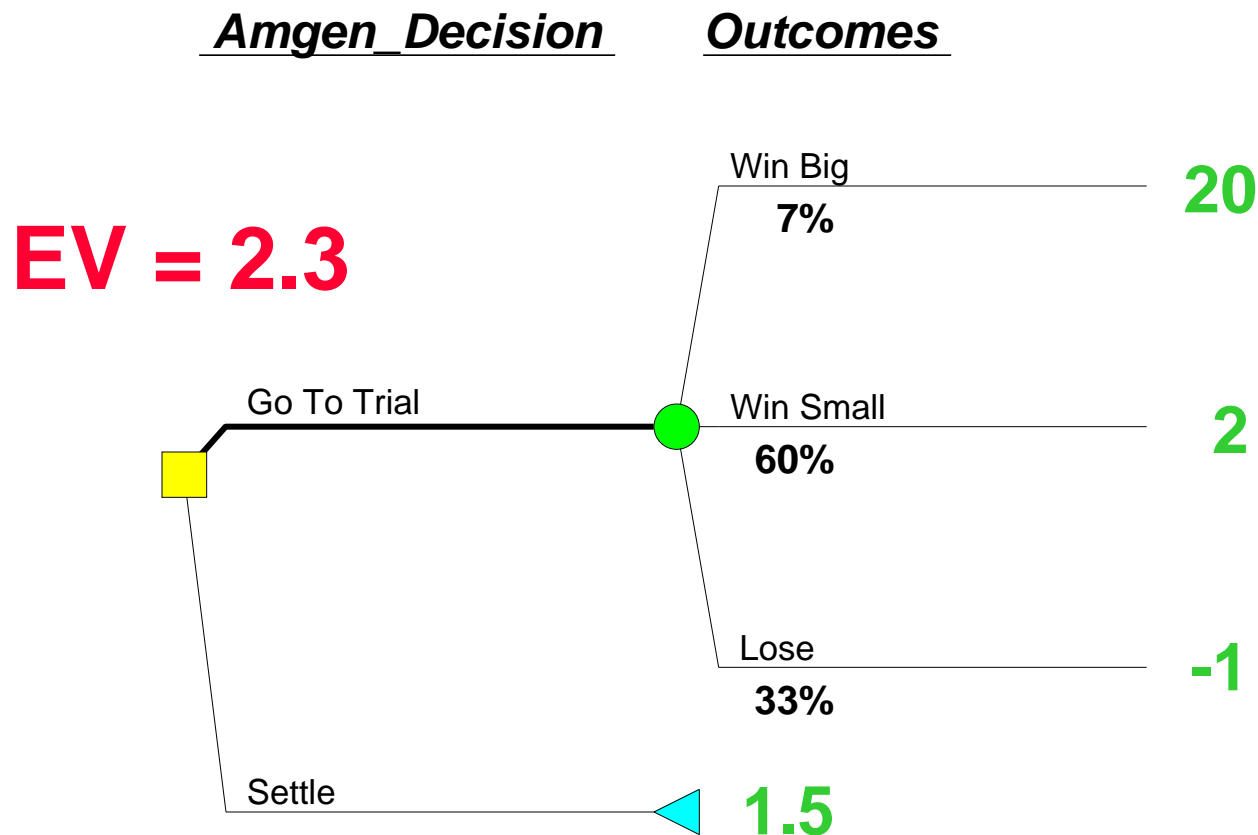


This decision policy graph shows the lowest cost alternative for given energy prices.

A litigation decision illustrates another form of 2-way sensitivity analyses



The two key drivers behind this decision are the probability of winning and the impact of winning big



A single graphic with iso-EV lines helped to build confidence in the recommendations

